

no likely food plant candidates in the Chambal area.

The Chambal habitat, to my mind, is a most surprising one for the species. The ravines have summer temperatures in excess of 45° Centigrade, are very dry, and contain a basically xerophilous vegetation dominated by *Capparis aphylla*. Thousands of *Anaphaeis aurota* F. were hatching in the area at the time. All other butterflies present were typical of arid tropical lands in Asia, and in some cases also Africa. The presence of *A. argyreus* in large numbers was highly anomalous. But there they were, and they must have had an alternative, unrecorded food plant.

Discussion

A. hyperbius definitely cannot permanently

survive on the plains of India, and the July records from Delhi in 1961 must be exceptional. A revisit to the locality on 1.iv.1986 yielded no specimens. Confirmation of this was found in the Nilgiri Mountains of South India where I reared some 100 pupae in Kotagiri (1900 m) with very little mortality. Of the pupae obtained, eighty hatched in Kotagiri without incident, while most of twenty hatching at Mettupalayam on the plains were crippled, apparently because temperatures reached very high levels at the time.

The ability of *A. hyperbius* to breed at low altitudes during cool weather is probably a factor in its wide distribution in the montane zones of the Asian tropics. More information on its migrations and survival on the plains would be of great interest.

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REFERENCES

ELIOT, J. N. (1978): Revised edition of Corbet & Pendlebury The butterflies of the Malay Peninsula. Kuala Lumpur.
LARSEN, T. B. (1986): Seasonal movements of Palaearctic migrant butterflies into the Indian plains

— a substitute for, or a supplement to, hibernation. *Atalanta*, 16: 245-252.
RHE PHILIPPE, G. W. V. de (1902): The Butterflies of the Lucknow District. *J. Bombay nat. Hist. Soc.* 14: 481-493.

33. REVISED NOMENCLATURE FOR SOME BUTTERFLIES OF THE INDIAN REGION

Subsequent to my contributions on the nomenclature of Indian butterflies (Varshney 1980, 1985), two significant publications from the British Museum (Nat. Hist.) have appeared, which have changed the names of butterflies in two families considerably. These changes involve a number of species occurring in the

Indian region. Hence this note is put up to update our information on these taxa.

Family DANAIIDAE

Ackery & Vane-Wright (1984) have revised the world fauna of milkweed butterflies (Sub-

family Danainae). On the one hand they have resurrected many names from the synonymy, and on the other proposed several new taxa. I tend to agree with their statement, "Although homonymy, synonymy and misidentification have all played a part in this chequered history, the last category, the creation or recognition of false groups, has had the most undesirable effects."

All species recorded from different parts of the Indian region, under their present names, are listed below. The taxa are arranged alphabetically, and the distribution is shown alongside, restricted to Indian region only. The number in square brackets on left side, refers to the Sl. No. of that species in the Table 1 of my earlier paper in this *Journal* (Varshney 1980: 34).

Subfamily DANAINAE

Tribe DANAINI

1. *Danaus* (*Anosia*) *chrysippus* (Linn.) — Sri Lanka; NW., NE. and S. India, Andaman & Nicobar Is., Nepal and Burma.
2. *D.* (*Salatura*) *affinis* (Fabr.) — India: Nicobar Is.
3. [9] *D.* (*S.*) *genutia* (Cramer) — Sri Lanka; NW., NE. and S. India, Andaman & Nicobar Is.; Nepal and Burma.
4. [10] *D.* (*S.*) *melanippus* (Cramer) — India: Nicobar Is.; Burma.
5. *Ideopsis* *juventa* (Cramer) — India: Nicobar Is.
6. *I. similis* (Linn.) — Sri Lanka; Burma.
7. *I. vulgaris* (Butler) — Burma.
8. [4] *Parantica* *aglea* (Stoll) — Sri Lanka; N.W., N.E. and S. India, Andaman Is.; Nepal and Burma.
9. *P. agleoides* (Felder & Felder) — NE. India and Nicobar Is.; Burma.
10. *P. aspasia* (Fabr.) — Burma.

11. *P. melaneus* (Cramer) — Nepal; NE. India; and Burma.
12. *P. nilgiriensis* (Moore) — S. India.
13. *P. pedonga* Fujioka — Nepal and NE. India.
14. [5] *P. sita* (Kollar) — NW. and NE. India; Nepal; Burma.
15. [6] *P. taprobana* (Felder & Felder) — Sri Lanka.
16. *Tirumala gautama* (Moore) — India: Nicobar Is.; Burma.
17. [7] *T. limniace* (Cramer) — Sri Lanka; NW., NE. and S. India, Andaman & Nicobar Is.; Nepal and Burma.
18. *T. septentrionis* (Butler) — Sri Lanka; NW., NE. and S. India; Nepal and Burma.

Tribe EUPLOEINI

19. [17] *Euploea algea* (Godart) — Nepal; NE. India; Burma.
20. *E. camaralzeman* Butler — Burma.
21. [15] *E. core* (Cramer) — Sri Lanka; NW., NE. and S. India, Andaman & Nicobar Is.; Nepal and Burma.
22. [12] *E. cramerii* Lucas — NE. India and Nicobar Is.; Burma.
23. [11] *E. doubledayi* Felder & Felder — NE. India and Burma.
24. *E. eunice* (Godart) — India: Nicobar Is.; and Burma.
25. *E. eyndhovii* Felder & Felder — Burma.
26. [14, 20] *E. klugii* Moore — Sri Lanka; NE. and S. India; Burma.
27. *E. midamus* (Linn.) — NE. India and Andaman Is.; Burma.
28. *E. modesta* Butler — Burma.
29. *E. mulciber* (Cramer) — NW., NE. and S. India; Nepal; Burma.
30. [16] *E. phaenareta* (Schaller) — Sri Lanka and Burma.
31. *E. radamanthus* (Fabr.) — Nepal; NE. India and Burma.

32. [13, 18] *E. sylvester* (Fabr.) — Sri Lanka; NE. and S. India; Burma.
33. *E. tulliolus* (Fabr.) — Burma.
34. *Idea agamarschana* (Felder & Felder) — India: NE. India and Andaman Is.; and Burma.
35. *I. hypermnestra* (Westwood) — Burma.
36. *I. iasonia* (Westwood) — Sri Lanka.
37. *I. leuconoe* Erichson — Burma.
38. [2] *I. lynceus* (Drury) — Burma.
39. *I. malabarica* (Moore) — S. India.
4. *A. puspa cyanescens* (de Niceville) — India: Nicobar Is.
5. [30] *A. puspa felderi* Toxopeus — Sri Lanka; S. India: up to Bombay.
6. [30] *A. puspa gisca* (Fruhstorfer) — Pakistan; N. India and Andaman Is.; Bangladesh; Burma.
7. *A. puspa lambi* (Distant) — S. Burma: Victoria Point.
8. *A. puspa prominens* (de Niceville) — India: S. Nicobar Is.
9. *Callenya lenya lenya* (Evans) — S. Burma.
10. [48, 49] *C. malaena malaena* (Doherty) — India: Manipur; Burma.
11. [45, 46] *Celastrina argiolus jyntheana* (de Niceville) — Along S. Himalayas: Nepal; NE. India; Burma. Also see note below.
12. [44] *C. argiolus kollari* (Westwood) — W. Himalayas: Pakistan (Chitral) to India (Kumaon).
13. [43] *C. gigus* (Hemming) — W. Himalayas; W. Nepal.
14. *C. hersilia vipia* Cantlie & Norman — E. Nepal; India: Sikkim and NE. India.
15. [42] *C. huegelii huegelii* (Moore) — India: W. Himalayas upto Naini Tal.
16. [42] *C. huegelii oreoides* (Evans) — Nepal; India: E. Himalayas.
17. [41] *C. lavendularis lavendularis* (Moore) — Sri Lanka; SW. and S. India.
18. [41] *C. lavendularis limbata* (Moore) — N. India; Burma.
19. *C. morsheadi morsheadi* (Evans) — India: Upper Brahmaputra basin.
20. *C. oreas oreana* (Swinhoe) — NE. India: Khasi & Jyntia Hills.
21. *C. oreas yunnana* Eliot & Kawazoe — Burma.
22. [36] *Celatoxia albidisca* (Moore) — Hills of S. India.
23. [37] *C. marginata marginata* (de Niceville) — C. Himalayas: India (Sikkim, NE. India) to Burma (Karen Hills).

Family LYCAENIDAE

Eliot & Kawazoe (1983) have revised the world fauna of *Lycaenopsis* group of species, which are now treated under the Subfamily Lycaeninae, Tribe Polyommattini. They have proposed numerous new combinations. The Indian taxa, earlier dealt under *Lycaenopsis* or *Celastrina*, have now been put in 12 genera. Therefore, a portion of the Table 6 (from Sl. Nos. 30 to 50) in my paper dealing with this family (Varshney 1985: 314-15) requires to be altered. I have alphabetically listed below all species and subspecies recorded from the Indian region by Eliot & Kawazoe (l.c.). The distributional range within Indian region is shown alongside. The Sl. No. in brackets given on left, refers to the table 6 of my above cited paper, and shows the species covered in the book by Wynter-Blyth (1957).

Subfamily LYCAENINAE

Tribe POLYOMMATINI

1. *Acytolepis lilacea indochinensis* Eliot & Kawazoe — Burma: Pegu Yomas.
2. [31] *A. lilacea lilacea* (Hampson) — S. India: upto Nilgiris.
3. [31] *A. lilacea moorei* (Toxopeus) — Sri Lanka.

24. [38] *Lestranicus transpectus* (Moore) — NE. India; Bangladesh; Burma.
25. *Lycaenopsis haraldus renonga* Riley — S. Burma; Mergui.
26. *Megisba malaya presbyter* Fruhstorfer — India: Andaman Is.
27. *M. malaya sikkima* Moore — N. India, NE. Himalayas.
28. *M. malaya thwaitesi* Moore — Sri Lanka; India: Sikkim, Orissa, S. India up to Bombay.
29. [40] *Monodontides (M.) musina musinoides* (Swinhoe) — NE. India; Burma.
30. *Neopithecops zalmora andamanus* Eliot & Kawazoe — India: Andaman & Nicobar Is.
31. *N. zalmora dharmia* (Moore) — Sri Lanka; S. India upto Nilgiris.
32. *N. zalmora zalmora* (Butler) — India: Kashmir to Bengal, Assam and Orissa; Bangladesh and Burma.
33. [50] *Notarthrinus binghami* Chapman — NE. India; N. Burma.
34. *Oreolyce (Arletta) vardhana nepalica* (Forster) — Central and E. Nepal.
35. [32] *O. (A.) vardhana vardhana* (Moore) — Pakistan; India: NW. Himalayas (Kashmir to Naini Tal).
36. [47] *O. (O.) dohertyi* (Tytler) — India: Nagaland.
37. *Plautella cossaea pambui* (Eliot) — S. Burma.
38. [33] *Udara (Penudara) albocaerulea albocaerulea* (Moore) — C. Himalayas: India and Nepal; and Burma.
39. *U. (Selmanix) selma cerima* (Corbet) — NE. India; Burma.
40. [35] *U. (U.) akasa mavisa* (Fruhstorfer) — S. India; Sri Lanka.
41. *U. (U.) cyma cyma* (Toxopeus) — S. Burma.
42. [39] *U. (U.) dilecta dilecta* (Moore) — Pakistan; N. India and Burma.
43. [34] *U. (U.) lanka* (Moore) — Sri Lanka.
44. *U. (U.) placidula howarthi* (Cantlie & Norman) — NE. India: Assam, Manipur; and Burma.
45. *U. (U.) singalensis* (R. Felder) — Sri Lanka and S. India.

NOTES

A correction may be made in my Table 5A (*JBNHS* 82: 310), '*Magisba*' should be read as '*Megisba*'.

Eliot & Kawazoe (1983: 217) have changed the well known name *Celastrina jynteana* Moore to *C. argiolus iynteana* (de N.). They state, "The original spelling was *iynteana* both in the text and in the plate. Subsequently de Niceville (1890: 104) altered the spelling to *jynteana*, presumably because Moore had in the meantime introduced that spelling, and this has been copied by all subsequent authors." The change is unfortunate. The species was named after its habitat: the Jynte Hills (Meghalaya, India). Its original citation '*jynteana*' was a misspelling. De Niceville (1890) and all subsequent workers have correctly used the name *jynteana*, which is restored here under the Article 32 (d) of the International Code of Zoological Nomenclature (1985, 3rd edition).

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REFERENCES

- ACKERY, P. R. & VANE-WRIGHT, R. I. (1984): Milkweed butterflies — their cladistics and biology. British Museum (Nat. Hist.), London: 425 pp.
- DE NICEVILLE, L. (1890): The butterflies of India, Burmah & Ceylon, Vol. 3. Calcutta: 503 pp.
- ELIOT, J. N. & KAWAZOE, A. (1983): Blue butterflies of the *Lycaenopsis* group. British Museum (Nat. Hist.), London: 309 pp.
- INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE (1985): International Code of Zoological Nomenclature, 3rd edition. London: 338 pp.
- VARSHNEY, R. K. (1980): Revised nomenclature for taxa in Wynter-Blyth's book on the butterflies of Indian region. *J. Bombay nat. Hist. Soc.* 76(1) (1979): 33-40.
- (1985): Revised nomenclature for taxa in Wynter-Blyth's book on the butterflies of Indian region — II. *ibid.* 82(2): 309-321.
- WYNTER-BLYTH, M. A. (1957): Butterflies of the Indian region. Bombay Natural History Society, Bombay: 523 pp.

34. SOME OBSERVATIONS ON THE MOTHER-YOUNG RELATIONSHIP IN *MESOBUTHUS TAMULUS TAMULUS* (FABR.) (ORDER: SCORPIONIDA, FAMILY: BUTHIDAE)

(With two text-figures)

INTRODUCTION

This study describes 9 month's observations on commonly occurring yellow scorpion, *Mesobuthus tamulus tamulus* (Fabr.) in Maharashtra. It is well known that the mother carries the young on her back. As they grow in size, after 8-10 days after birth, the larvae get scattered from the mother and gradually maternal care behaviour diminishes in intensity.

MATERIAL AND METHODS

14 gravid females were collected from Pirangut Wagholi and Kamshet around Pune. They were kept in a wooden cage of size 1' H × 1½' L × 1' W (Fig. 1) with wire mesh on 3 sides and a glass door. The legs of the cage were kept in plastic containers holding water to keep out ants. Black soil was spread and pieces of coconut shell were placed in the cage. Insects were given as food and water was given twice a week.

After parturition, each mother along with its

young was separated and kept in a glass jar with a cover of muslin cloth.

OBSERVATIONS

After delivery, the mother carried a litter of 20-25 tiny white young, measuring 10 mm in length, under a thin white birth membrane on her back (Fig. 2). Occasionally they moved but otherwise were quiescent. During this phase, the mother hungrily devoured 2-3 prey offered, one by one. However her movements were restricted and she attempted to catch a prey only when it was within her range. The tail constantly covered the young and the mother alertly responded to minute stimuli. The fingers of pedipalps were open. The ventral surface of the body touched the ground but the posterior portion of the mesosoma was slightly uplifted. The legs were spread and the back arched; when the young scorpions crawled over her legs and pedipalps, the mother remained motionless.